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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/820,579

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Harald Kerschbaumer

IVe02US

8574

7590

01/25/2006

John C. Thompson
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EXAMINER

SUTHAR, RISHI S

ART UNIT

PAPER NUMBER

2851

DATE MAILED: 01/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/820,579

Applicant(s)

KERSCHBAUMER ET AL.

Examiner

Rishi Sutnar

Art Unit

2851

– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 December 2005 (amendment).
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-9 and 12-16 is/are rejected.
7) ☒ Claim(s) 10,11 and 17 is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 08 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 20051219.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

Responsive to amendment filed on 19 December 2005.

Claim Objections

1. Claim 3 recites the limitation "the light point" on page 2. There is insufficient antecedent basis for this limitation in the claim.
2. Claim 6 and 14 recite the limitation "one of the laser diodes" on page 3 and page 5, respectively. There is insufficient antecedent basis for this limitation in the claim, since this claim implies there is more than one laser diode.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-9 and 12-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Cooper et al. (U.S. Patent No. 5,051,823).

As to claim 1, Cooper et al. teaches an intra oral camera for producing a picture of an intra oral object wherein the intra oral object may include a tooth of a dental patient, the intra oral camera comprising: a camera (104) to take a picture of the intra-

oral object once the camera has been oriented in a proper picture taking position relative to the intra-oral object, the camera being operable to capture sight information relating to the intra oral object; a pinpoint light source for irradiating the intra-oral object with a pinpoint light beam; and an indicating means (video screen) for indicating that the camera has substantially assumed the proper picture taking position relative to the intra-oral object for taking a picture of the intra-oral object, the indicating means being operable to evaluate at least one of sight information relating to the intra-oral object and light, captured by the camera, which comprises light coming from the intra-oral object in response to the irradiation thereof by the pinpoint light source and to provide an indication that the camera has substantially assumed the proper picture taking position relative to the intra-oral object based upon such evaluation (col. 3, lines 34-57, col. 5, lines 61-69).

As to claim 2, Cooper et al. teaches the pinpoint light source comprises at least one laser diode that projects a light point onto the tooth of the dental patient (col. 5, lines 61-69).

As to claim 3, Cooper et al. teaches the optical axis of the camera and the light point produced via the light source coincide at an intersection point, and the light source being oriented at an angle to the optical axis. Since the light is used as an aiming beam that shows up on the video screen, it is inherent that the light intersects with the optical axis.

As to claim 4, Cooper et al. teaches the angled orientation of the light source relative to the optical axis is such that at a given spacing of the camera from the intra

oral object, the optical axis coincides intersects the light point projected onto the intra-oral object from the light source.

As to claim 5, Cooper et al. teaches his invention has light **sources**. (col. 2, lines 63-65). This implies that plural light sources can be used for illuminating the area. Further, he teaches that visible light for illuminating the area can be laser diodes (col. 5, lines 61-69). Further, when two light sources are used, they will inherently be oriented symmetrically relative to one another at the midpoint between the two lights.

As to claim 6, Cooper et al. teaches the indicating means is operable to evaluate sight information relating to one of the laser diodes and to indicate the camera has substantially assumed the proper picture taking position (col. 3, lines 34-57).

As to claim 7, Cooper et al. teaches a means for permitting at least one of either an automatic picture taking operation (leaving the video recorder ON) or a manually operated picture taking operation (providing photographs of the recorded images) in response to an indication that the camera has substantially assumed, for a predetermined interval, the proper picture taking position (col. 3, lines 37-42).

As to claim 8, Cooper et al. the indicating means displays whether the camera has been oriented relative to a selected selectively cropped camera frame portion (magnified video screen) relating to the sight information, whereby the selectively cropped frame portion overlays the light coming from the intra-oral object in response to the irradiation thereof by the light source (col. 3, lines 34-57).

As to claim 9, Cooper et al. teaches the light source is a pinpoint light source (laser) that projects a light point onto the tooth of the dental patient and the selectively

cropped camera frame portion is larger than the light point (through magnification on video screen).

As to claim 12, Cooper et al. teaches a method for producing a picture of an intra-oral object wherein the intra-oral object may include a tooth of a dental patient, the method comprising: providing an intra-oral camera (102) and a pinpoint light source (col. 5, lines 61-69); orienting the camera to take a picture of the intra-oral object; optionally as needed, adjusting the orientation of the pinpoint light source relative to the intra-oral object such that the intra-oral object will be irradiated by a light beam from the pinpoint light source as the camera is actuated to take a picture of the intra-oral object; and indicating (on video screen), in response to an evaluation of at least one of sight information and light, which comprises light coming from the intra-oral object in response to the irradiation thereof by the pinpoint light source, that the camera has substantially assumed a proper picture taking position (col. 3, lines 34-57).

As to claim 13, Cooper et al. teaches the pinpoint light source comprises at least one laser diode that projects a light point (visible light signal) onto the tooth of the dental patient and the step of indicating includes indicating that the camera has substantially assumed a proper picture taking position (col. 3, lines 34-57, col. 5, lines 61-69).

As to claim 14, Cooper et al. teaches the step of indicating includes evaluating sight information relating to the light property of one the laser diode and indicating that the camera has substantially assumed the proper picture taking position as soon as the camera, while it is being oriented during the step of orienting, has substantially assumed the proper picture taking position relative to the intra oral object (col. 3, lines 34-57).

As to claim 15, Cooper et al. teaches the method further comprises permitting at least one of either an automatic picture taking operation (leaving the video recorder ON) or a manually operated picture taking operation (providing photographs of the recorded images) in response to an indication that the camera has substantially assumed, for a predetermined interval, the proper picture taking position (col. 3, lines 37-42).

As to claim 16, Cooper et al. teaches the step of indicating includes indicating whether the camera has been oriented relative to a selected selectively cropped camera frame portion (magnified video screen) relating to the sight information, whereby the selectively cropped camera frame portion overlays the light coming from the intra-oral object in response to the irradiation thereof by the pinpoint light source (col. 3, lines 37-42). In the invention of Cooper et al., it is inherent that the video screen will overlay the light coming from the light source in order for the operator can see the image on the video screen.

Allowable Subject Matter

3. Claims 10, 11 and 17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Pfeiffer et al. (U.S. Patent No. 6,885,464), Elbaum et al. (U.S.

Patent No. 6,201,880), and Mullane, Jr. (4,184,175) all disclose imaging devices for intra-oral objects using light sources.

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Telephone Numbers

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rishi Suthar whose telephone number is 571-272-8456. The examiner can normally be reached on M-F 8:00am to 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on 571-272-2258. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



William Perkey
Primary Examiner

Rishi Suthar
Examiner
Art Unit 2851

RS